CO2+ Temperature Transmitter

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PAR-620-CO2

User Manual

Specifications

Power supply	24VAC (50/60HZ±10%), 24VDC
Consumption	2.2W average
Gas sensing element	Carbon Dioxide: Non-Dispersive Infrared Detector (NDIR) ABC Logic Self Calibration Algorithm
CO_2 measuring range	0～2,000ppm (F2000TSM-CO2-S211T-02) √ 0～5,000ppm (F2000TSM-CO2-S211T-05) 0～20,000ppm (F2000TSM-CO2-S211T-20) 0～50,000ppm (F2000TSM-CO2-S211T-50)
Accuracy@25℃(77℉),2000ppm	±40ppm +3% reading
Warm up time for each turning-on	<5minutes (operational)
Temperature measuring range/ Accuracy	0~50℃/ ±0.5℃ (25℃, 40%-60%RH)
Humidity measuring range / Accuracy	5 -95%RH / ±3%RH (25℃, 40%-60%RH)
Analog output	2 X 0～10VDC
Communication interface	RS-485, 9600/14400/19200(default)/28800 or 38400bps (programmable selection), 15KV antistatic protection.
Operation conditions	0~50℃(32~122℉); 0~95%RH, non condensing
Storage conditions	-40~70℃(-40~158℉)
Net weight/ Dimensions	105g， 100mm×80mm×28mm
Installment standard	65mm×65mm(2”×4”) wire box, or hang on a nail
IP rate	IP30

Mounting and Wire Connection

- Notice the supply power voltage of the transmitter: 24VAC. Do not install the transmitter on voltages higher than marked on the transmitter.
- Following step 1 to 4 in figure. 1 to remove the cover. First, prepare a flat head screwdriver and put it deep inside of the hole on the top of the transmitter housing following step 1. Then slant the screwdriver and open the cover gently following step 2. Do not mount it near diffuser or any steam source, in direct sunlight.
- Mount the main part first, there are two dimensions available (see figure 2). Place the transmitter against the wall at desired location; make sure wires can be passed through the notch on the back board.
- Connect wires to terminal strips, (see fig.3). Make sure wiring connection correct and secure.
- Follows the step 5 to step 8 in figure 4 to close the cover.

Fig.1 open the cover

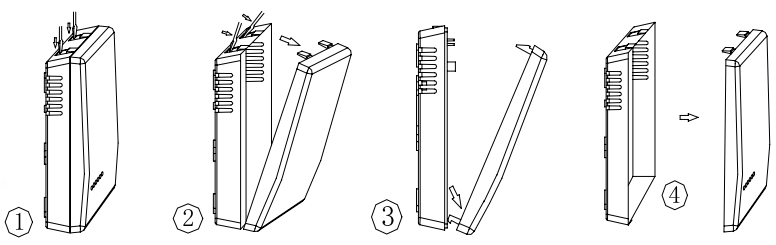

Fig.2 wall plate

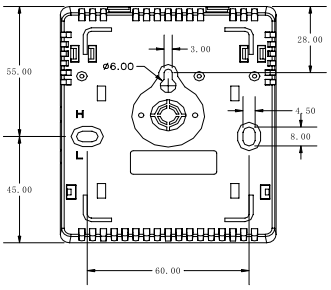

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Fig. 3 wiring diagram

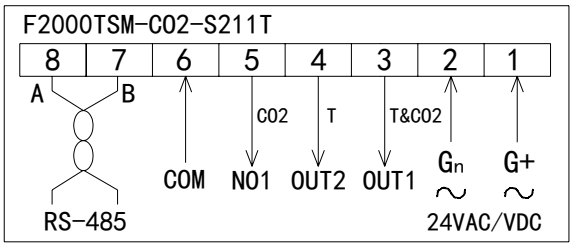
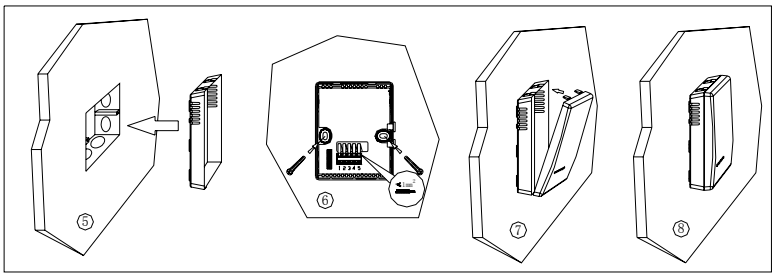


Fig.4 close the cover



Connection and output

Connection Terminal		Function	Electrical Data
1	G+	Power (+)	24VAC/24VDC +
2	G0	Power ground (-)	24VAC/24VDC
3	OUT1	Analog output 1 (+)	0~10VDC output for both CO2 and temp (CO2 500ppm~1,500ppm and temp 23℃~29℃, lower and higher limits for both CO2 and temp are adjustable)
4	OUT2	Analog output 2 (+)	0~10VDC output for temp 23℃~29℃ (Both lower and higher limits are adjustable)
5	NO1	ON/OFF output	Rated switching current 3A (240VAC/30VDC), resistance load; On/off output for CO2, 900ppm, also adjustable
6	COM		
7	B	RS485 interface	9600/14400/19200(default)/28800 or 38400bps (Programmable selection), 15KV antistatic protection.
8	A		

Important Instructions:

1. About analog output 2: combined output for CO2 and temp. The higher voltage output is effective at a certain time. E.g.: At a certain time, voltage value for current CO2 is 5DVC and voltage value for current temp. is 4.5VDC, then analog output 2 would be 5VDC instead of 4.5VDC.
2. Don't shake or hit the transmitter too much in shipment or in mounting to protect the internal infrared CO2 sensor from any damage and excursion of infrared receiver.
3. When open the cover of the transmitter, you'll see one PCB board mounted over another bigger PCB board. This upper PCB board is loaded with CO2 sensor. Don't uninstall the upper board from the below one without instruction from our engineers, in order not to cause any damage to the CO2 sensor.
4. When

a. First use CO2 transmitter, or

b. Reuse CO2 transmitter after a long time unused or

c. CO2 measurement is proved to be incorrect (by comparing with the measurement of other accurate CO2 products, or put the transmitter outdoors and its measurement is away from the range of 350ppm~450ppm, which is the normal ambient CO2 level range.)

Then let ABC Logic^{TM} Self Calibration System work as follows:

Keep the CO2 transmitter energized continuously for at least 2 days to let CO2 sensor's ABC Logic^{TM} self-calibration system operate properly. After more than 2 days' calibration, if the measurement (indicated by the analog output) of the CO2 transmitter still exceeds over the accuracy, you need to let it self-calibrated for a longer time. Here's the typical 14-day calibration solution: During a 14-day period, place the CO2 transmitter twice in outdoors or unoccupied places where CO2 level is around 400ppm. Each time let it be there for more than 4 hours and then check the CO2 measurement via the analog output. If the CO2 measurement is in its accuracy limit, it indicates the measurement is right.

Notice:

a. Use of cellular telephones or radio transceivers with two feet of the sensor during calibration process could cause sensor interference, calibration errors and affect sensor accuracy. Please refrain from using these devices during sensor calibration.

b. When checking the analog output, please avoid breath out directly to the CO2 transmitter. It's better to connect the output terminals with the Extending Wires with length of more than 1 meter. When the CO2 transmitter becomes stable after more than 10 minutes turning-on, check the analog output through the extending wires. That's because people's breath influences CO2 level.